A Model for Transfer of PCBs Among Plants, Invertebrates, and Lower Vertebrates of the Puget Sound/Georgia Basin Ecosystem

James E. West and Sandra M. O'Neill
Washington Department of Fish and Wildlife

Abstract

We present a graphic conceptual model developed during the September 2002 workshop entitled "PCBs in the Foodweb," which describes major trophic pathways in the Puget Sound/ Georgia Basin (PS/GB) marine ecosystem, through which PCBs might bioaccumulate or biomagnify. This Lower Trophic Level submodel identifies potential pathways among plants, invertebrates, and lower vertebrates, and comprises three modules:

1. A graphic image of the lower trophic levels food web (LTLFW Module) illustrating major ecological groups in the PS/GB ecosystem, and their trophic connections ("who eats whom").
2. A text outline providing explanations of groupings and suggestions for indicator or representative species.
3. A spreadsheet that will apply what we think are the dominant uptake (e.g., gill exchange versus diet) and elimination pathways for each ecological group.

The Lower Trophic Submodel will be linked with two other submodels developed during the PCB workshop, one dealing with loadings and abiotic transfer mechanisms, and the other with PCB pathways among higher trophic levels (birds, marine mammals, and humans).